

ABSTRACT

Methods and apparatuses of determining the pH of a sample. A method can comprise determining an infrared spectrum of the sample, and determining the hemoglobin concentration of the sample. The hemoglobin concentration and the infrared spectrum can then be used to determine the pH of the sample. In some embodiments, the hemoglobin concentration can be used to select a model relating infrared spectra to pH that is applicable at the determined hemoglobin concentration. In other embodiments, a model relating hemoglobin concentration and infrared spectra to pH can be used. An apparatus according to the present invention can comprise an illumination system, adapted to supply radiation to a sample; a collection system, adapted to collect radiation expressed from the sample responsive to the incident radiation; and an analysis system, adapted to relate information about the incident radiation, the expressed radiation, and the hemoglobin concentration of the sample to pH.